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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,158	03/03/2004	Mark Daniel Gorman	124211/11941 (21635-0123)	3714
31450	7590	01/25/2005	EXAMINER	
MCNEES WALLACE & NURICK LLC 100 PINE STREET P.O. BOX 1166 HARRISBURG, PA 17108-1166			MARTIR, LILYBETT	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/792,158

Applicant(s)

GORMAN ET AL.

Examiner

Lilybett Martir

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-11, 13, 14, 16, 18-22 and 24 is/are rejected.
- 7) ☒ Claim(s) 5, 7, 12, 15 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/3/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3,4,6,8-10,13-14,16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al. (Pat. 5,980,103) in view of Hunter et al. (Pat. 5,980,206).

- With respect to claim 1, Ikuno et al. teaches preparing a test specimen of the test material 40, thermally cycling the test specimen through at least one test cycle, wherein in each test cycle the specimen is heated to a higher specimen temperature and thereafter cooled to a lower specimen temperature (Col. 2, lines 19-25, Col. 8-9, lines 67-4, Col. 10, lines 26). Ikuno et al. fails to teach the test specimen comprising a base, and a rib extending outwardly from the base, and evaluating the test specimen for thermal mechanical fatigue damage. Hunter teaches a test piece that is shaped so that it has a base (note the top wider portion), and a rib 44 extending outwardly from the base as noted in Figure 5a, and he also teaches evaluating the test specimen for thermal mechanical fatigue damage (Col. 7, lines 2-13). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify

the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific manner so that it comprises a rib and a base and obviously monitoring said specimen to determine fatigue damage caused by the fatigue testing to further improve the strength and stiffness of said specimen (Col. 8, lines 1-3) and to acquire values and observations that represent the results obtained in a reliable and efficient manner.

- With respect to claim 3, Ikuno et al. fails to teach the step of preparing the test specimen with two ribs extending outwardly from the base. Hunter et al. teaches of preparing the test specimen with two ribs 14a and 14b extending outwardly from the base (note the wider part on the top) as noted in figure 1a. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific manner so that it comprises a pair of ribs in order to make it more durable and less prone to flaw (Col. 4, lines 5-10).
- With respect to claim 4, Ikuno et al. fails to teach the step of preparing includes the step of preparing the test specimen with at least one slot in the rib, wherein each slot extends parallel to a lengthwise direction of the rib. Hunter et al. teaches a test specimen 10 that has a slot (note the hollow arched portion in the center) in the rib portion 14a and 14b,

wherein each slot extends parallel to a lengthwise direction of the rib as noted in Figures 1a and 1b. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific manner so that it comprises a slot on the ribs in order to make it more durable and less prone to flaw (Col. 4, lines 5-10).

- With respect to claim 6, Ikuno et al. fails to teach the step of preparing the test specimen with more than one slot in the rib, wherein each slot extends parallel to a lengthwise direction of the rib. Hunter et al. teaches a specimen 10 that comprises more than one slot (note the hollow arched portion in the center between every leg of the rib) in the rib as in element 14a-14c, wherein each slot extends parallel to a lengthwise direction of the rib as noted in Figure 5c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific manner so that it comprises a slot on the ribs in order to make it more durable and less prone to flaw (Col. 4, lines 5-10, Col. 9, lines 1-14).
- With respect to claims 8-10, Ikuno et al fails to teach the step of preparing includes the step of preparing the test specimen having a

mass of the base at least 25 times larger than a mass of the rib, preparing the test specimen having a width of the base at least 5 times larger than a width of the rib, or preparing the test specimen having a height of the base at least 3 times larger than a height of the rib. Hunter teaches a test piece that is shaped so that it has a base (note the top wider portion), and a rib 44 extending outwardly from the base as noted in Figure 5a. Since In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific size and manner so that it is capable of fitting in reduced spaces (Col. 3, lines 1-10).

- With respect to claim 13, Ikuno et al. teaches the step of thermally cycling includes the step of thermally cycling the test specimen in a plurality of test cycles (Col. 10, lines 10-11).

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- With respect to claim 14, Ikuno et al. teaches the step of thermally cycling includes the step of thermally cycling the test specimen by general heating (Col. 10, lines 10-11).
- With respect to claim 16, Ikuno et al. teaches the step of thermally cycling including the step of heating the specimen to the higher specimen temperature, holding the rib at the higher rib temperature for a period of time, and thereafter cooling the specimen to a lower specimen temperature (Col. 2, lines 11-26, Col. 10, lines 10-11).
- With respect to claim 18, Ikuno et al. fails to teach the step of evaluating the test specimen optically for a presence of fatigue cracks in the rib. Hunter et al. teaches observing the test specimen optically for a presence of fatigue cracks in the rib (Col. 5-7, lines 8-13). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by monitoring possible cracks in the specimen in order to determine the flaw tolerance of said specimen (Col. 5, lines 17-32).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al. in view of Hunter et al. as applied to claim 1 above, and further in view of Olson et al. (Pat. 4,933,239).

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- With respect to claim 2, Ikuno et al. fails to teach the step of preparing includes the step of preparing the test specimen of a nickel-base superalloy test material. Olson et al. teaches that nickel base superalloys are commonly known and utilized for their strength (Col. 3, lines 19-29 and Col.4, lines 64-68). Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, (125 USPQ416), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. as modified by Hunter et al., by further utilizing the teachings of the superalloy configuration of Olson et al. choosing a nickel based superalloy material to test it to make said device more versatile.
4. Claims 11,19,21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al. in view of Hunter et al. as applied to claim 1 above, and further in view of Eichenbrenner et al. (Pat. 3,795,134).
- With respect to claim 11, Ikuno et al. fails to teach the step of thermally cycling includes the step of maintaining the rib in compression while the rib is at the higher rib temperature. Eichenbrenner et al. teaches that in the fatigue testing art it is commonly known to utilize compressional loads in combination with heating cycles (Col. 1, lines 40-51). it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. as



modified by Hunter et al., by further utilizing the teachings of the fatigue test assembly of Eichenbrenner et al. by utilizing compressional loads as a heat cycle is being applied to facilitate the evaluation of the specimen being tested in a more realistic manner.

- With respect to claim 19, Ikuno et al. fails to teach preparing a test specimen of the test material 40, thermally cycling the test specimen through at least one test cycle, wherein in each test cycle the specimen is heated to a higher specimen temperature and thereafter cooled to a lower specimen temperature (Col. 2, lines 19-25, Col. 8-9, lines 67-4, Col. 10, lines 26). Ikuno et al. fails to teach the test specimen comprising a base, and a rib extending outwardly from the base, and evaluating the test specimen for thermal mechanical fatigue damage. Hunter teaches a test piece that is shaped so that it has a base (note the top wider portion), and a rib 44 extending outwardly from the base as noted in Figure 5a, and he also teaches evaluating the test specimen for thermal mechanical fatigue damage (Col. 7, lines 2-13). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific manner so that is comprises a rib and a base and obviously monitoring said specimen to determine fatigue damage caused by the fatigue testing to further improve the strength and stiffness of said specimen (Col. 8, lines 1-3) and to acquire

- values and observations that represent the results obtained in a reliable and efficient manner. Ikuno et al. also fails to teach the step of thermally cycling includes the step of maintaining the rib in compression while the rib is at the higher rib temperature. Eichenbrenner et al. teaches that in the fatigue testing art it is commonly known to utilize compressional loads in combination with heating cycles (Col. 1, lines 40-51). it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. as modified by Hunter et al., by further utilizing the teachings of the fatigue test assembly of Eichenbrenner et al. by utilizing compressional loads as a heat cycle is being applied to facilitate the evaluation of the specimen being tested in a more realistic manner.
- With respect to claim 21, Ikuno et al. fails to teach the step of preparing the test specimen having a mass of the base at least 25 times larger than a mass of the rib. Hunter teaches a test piece that is shaped so that it has a base (note the top wider portion), and a rib 44 extending outwardly from the base as noted in Figure 5a. Since In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not

patentably distinct from the prior art device. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. utilizing the teachings of the specimen structure of Hunter et al. by shaping it in a specific size and manner so that it is capable of fitting in reduced spaces (Col. 3, lines 1-10).

- With respect to claim 24, Ikuno et al. teaches the step of thermally cycling includes the step of thermally cycling the test specimen in a plurality of test cycles (Col. 10, lines 10-11).

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al. in view of Hunter et al. and Eichenbrenner et al. as applied to claim 19 above, and further in view of Olson et al. (Pat. 4,933,239).

- With respect to claim 20, Ikuno et al. fails to teach the step of preparing includes the step of preparing the test specimen of a nickel-base superalloy test material. Olson et al. teaches that nickel base superalloys are commonly known and utilized for their strength (Col. 3, lines 19-29 and Col.4, lines 64-68). Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, (125 USPQ416), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. as modified by Hunter et al., by further utilizing the

teachings of the superalloy configuration of Olson et al. choosing a nickel based superalloy material to test it to make said device more versatile.

6. Claims 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuno et al. in view of Hunter et al. as applied to claim 1 above and Eichenbrenner et al. as applied to claim 19 above, and further in view of Otobe et al. (Pat. 6,761,073).

- With respect to claims 17 and 22, Ikuno et al. fails to teach providing insulation at least a portion of the base. Otobe et al teaches that it is well known to utilize and provide insulation in the base of detecting members as are elements 11 and 13a or 1 and 3. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the thermal fatigue-testing device of Ikuno et al. as modified by Hunter et al. and Eichenbrenner et al. by providing it with an insulating portion to further prevent the occurrence of external factor that may interfere with the reliable testing or monitoring of a material, therefore making said test more reliable and accurate.

#### ***Allowable Subject Matter***

7. Claims 5,7,12,15 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, or if the limitations of any of

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said claims are introduced in the base claim, including all of the limitations of the base claim and any intervening claims.

**Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (571)272-2182. The examiner can normally be reached on 9:00 AM to 5:30 PM.

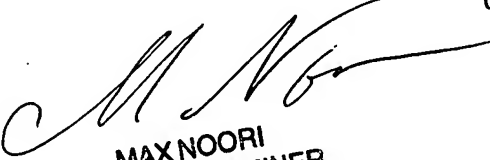
9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571)272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CM

Lilybett Martir  
Examiner  
Art Unit 2855

LCM

  
MAX NOORI  
PRIMARY EXAMINER